

## WHAT IS CLAIMED IS:

1. A testing apparatus for testing a device under test by supplying a current to said device under test, comprising:

a first power supply unit for generating a current to be supplied to said device under test; and

first and second coaxial cables through which said current generated by said first power supply unit is supplied to said device under test,

wherein said first power supply unit comprises:

a current detecting unit for detecting an amount of a voltage drop when said current generated by said first power supply unit passes through a predetermined resistor; and

a current controlling unit for controlling said current being supplied to said device under test in response to said amount of said voltage drop detected by said current detecting unit,

said first coaxial cable comprises:

a first internal conductor for conducting said current from said first power supply unit towards said device under test; and

a first external conductor provided around said first internal conductor with an insulator interposed therebetween for conducting said current from said device under test towards said first power supply unit, and

said second coaxial cable comprises:

a second internal conductor for conducting said current from said device under test towards said first power supply unit; and

a second external conductor around said first internal conductor with an insulator interposed therebetween for

conducting said current from said first power supply unit towards said device under test.

2. A testing apparatus as claimed in claim 1, wherein said current controlling unit controls said current supplied to said device under test so as to negate said amount of said voltage drop caused by said predetermined resistor.

3. A testing apparatus as claimed in claim 1 further comprising:

a voltage detecting unit for comparing a voltage to be applied to said device under test with a voltage being practically applied to said device under test and outputting a comparison result thereof,

wherein said current controlling unit controls said current supplied to said device under test further based on said comparison result outputted by said voltage detecting unit.

4. A testing apparatus as claimed in claim 1, wherein said first internal and second external conductors are coupled in parallel to each other and conduct said current from said first power supply unit towards said device under test, and

said first external and second internal conductors are coupled in parallel to each other and conduct said current from said device under test towards said first power supply unit.

5. A testing apparatus as claimed in claim 1 further comprising:

a second power supply unit with a same configuration as that of said first power supply unit for generating a current to be supplied to said device under test;

third and fourth coaxial cables through which said current generated by said second power supply unit is supplied to said device under test;

a multi-layer substrate on which said first and second power supply units are provided;

a first wiring pattern formed at said multi-layer substrate for electrically coupling said first power supply unit to said first and second coaxial cables; and

a second wiring pattern formed at said multi-layer substrate for electrically coupling said second power supply unit to said third and fourth coaxial cables,

wherein said third coaxial cable comprises:

a third internal conductor for conducting said current from said second power supply unit towards said device under test; and

a third external conductor provided around said third internal conductor with an insulator interposed therebetween for conducting said current from said device under test towards said second power supply unit,

said fourth coaxial cable comprises:

a fourth internal conductor for conducting said current from said device under test towards said second power supply unit; and

a fourth external conductor provided around said fourth internal conductor with an insulator interposed therebetween for conducting said current from said second power supply unit towards said device under test,

said first wiring pattern comprises:

a first feed pattern formed at a layer of said multi-layer substrate for conducting said current from said first power supply unit towards said first internal and second external

conductors; and

a first ground pattern for conducting said current from said first external and second internal conductors towards said first power supply unit, said first ground pattern being formed at a layer of said multi-layer substrate adjacent to said layer in order that said first ground pattern faces said first feed pattern, said first ground pattern having a same width as that of said first feed pattern, and

said second wiring pattern comprises:

a second feed pattern formed at a layer of said multi-layer substrate for conducting said current from said second power supply unit towards said third internal and fourth external conductors; and

a second ground pattern for conducting said current from said third external and fourth internal conductors towards said second power supply unit, said second ground pattern being formed at a layer of said multi-layer substrate adjacent to said layer in order that said second ground pattern faces said second feed pattern, said second ground pattern having a same width as that of said second feed pattern.

6. A testing apparatus as claimed in claim 5, wherein said first and second feed patterns are formed at a first layer of said multi-layer substrate, and said first and second ground patterns are formed at a second layer of said multi-layer substrate, said second layer being adjacent to said first layer with an insulation layer interposed therebetween.

7. A testing apparatus as claimed in claim 5, wherein each of said first and second power supply units applies a first same voltage to each of said first and second feed patterns, and a

second same voltage to each of said first and second ground patterns.

8. A testing apparatus as claimed in claim 7 further comprising:

a performance board for coupling said first to fourth coaxial cables electrically,

wherein said performance board electrically couples said first internal and second external conductors to said third internal and fourth external conductors, and said first external and second internal conductors to said third external and fourth internal conductors.

9. A testing apparatus for testing a device under test by supplying a current to said device under test, comprising:

first and second power supply units for generating a current to be supplied to said device under test;

a multi-layer substrate on which said first and second power supply units are provided;

a first wiring pattern formed at said multi-layer substrate for electrically coupling said first power supply unit to said device under test; and

a second wiring pattern formed at said multi-layer substrate for electrically coupling said second power supply unit to said device under test,

wherein said first wiring pattern comprises:

a first feed pattern formed at a layer of said multi-layer substrate for conducting said current from said first power supply unit towards said device under test; and

a first ground pattern for conducting said current from said device under test towards said first power supply unit,

said first ground pattern being formed at a layer of said multi-layer substrate adjacent to said layer in order that said first ground pattern faces said first feed pattern, said first ground pattern having a same width as that of said first feed pattern, and

said second wiring pattern comprises:

a second feed pattern formed at a layer of said multi-layer substrate for conducting said current from said second power supply unit towards said device under test; and

a second ground pattern for conducting said current from said device under test towards said second power supply unit, said second ground pattern being formed at a layer of said multi-layer substrate adjacent to said layer in order that said second ground pattern faces said second feed pattern, said second ground pattern having a same width as that of said second feed pattern.

10. A testing apparatus as claimed in claim 8, wherein each of said first and second power supply units comprises:

a current detecting unit for detecting an amount of a voltage drop when said current generated by said first or second power supply unit passes through a predetermined resistor; and

a current controlling unit for controlling said current being supplied to said device under test in response to said amount of said voltage drop detected by said current detecting unit.